REVISIONS

LTR	DESCRIPTION	DATE	APPROVED
A	Title clarification and part number correction.	28 Mar 85	S. Searcy
B	Changed manufacturer's eligibility.	26 Feb 87	S. Searcy
C	Changes in accordance with NOR 5945-R005.	02 Mar 00	K. Cottongim
D	Validation and update.	17 Sep 03	K. Cottongim

CURRENT DESIGN ACTIVITY CAGE CODE 037Z3
DEFENSE LOGISTICS AGENCY
DEFENSE SUPPLY CENTER COLUMBUS
COLUMBUS, OHIO 43216-5000

Prepared in accordance with ASME Y14.100

Selected item drawing

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REV STATUS OF PAGES	**REV**			D	D	D	D	D	D	D												
	PAGES			1	2	3	4	5	6	7												

PMIC N/A	**PREPARED BY** Richard A. Yannitti	**DESIGN ACTIVITY** **DEFENSE ELECTRONICS SUPPLY CENTER** **DAYTON, OH 45444-5000**
Original date of drawing 28 September 1984	**CHECKED BY** Max E. Lewis	**TITLE** RELAYS, ELECTROMAGNETIC, PERMANENT MAGNET DRIVE, 2PDT, LOW LEVEL TO 5 AMPERES (SIMILAR TO MIL-R-6106/27 EXCEPT FOR 12V DC COIL AND INVERTED STUD MOUNT)
	APPROVED BY Steven Searcy	
	SIZE A / **CODE IDENT. NO.** 14933	**DWG NO.** 84133
	REV D	**PAGE** 1 **OF** 7

AMSC N/A

5945-E114

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

1. SCOPE

1.1 Scope. This drawing describes the requirements for a hermetically sealed electromechanical relay supplied to the requirements of an established reliability version of MIL-PRF-83536/1 (see 6.5), except as noted herein.

1.2 Part or Identifying Number (PIN). The complete PIN shall be as follows:

84133	-001
Drawing number	Dash number

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.3).

SPECIFICATIONS

DEPARTMENT OF DEFENSE

MIL-PRF-83536 - Relays, Electromagnetic, Established Reliability, 25 Amperes and Below, General Specification For.

MIL-PRF-83536/1 - Relays, Electromagnetic, Established Reliability, DPDT, Low Level to 5 Amperes, Permanent Magnetic Drive, Hermetically Sealed, All Welded, DC Coils.

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-202 - Test Method Standard Electronic and Electrical Component Parts.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Document Automation and Production Service, Building 4D (DPM-DODSSP), 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with MIL-PRF-83536, MIL-PRF-83536/1, and as specified herein.

3.2 Interface and physical dimensions. The interface and physical dimensions shall be as specified in MIL-PRF-83536, MIL-PRF-83536/1, and herein (see figure 1).

3.2.1 Design documentation. The design documentation shall be in accordance with MIL-PRF-83536 unless otherwise specified in the contract or purchase order, and shall be retained by the manufacturer and available for review by the acquiring activity or contractor upon request.

3.3 Electrical characteristics. Relays shall meet all electrical characteristics as specified in MIL-PRF-83536/1 and herein.

3.3.1 Coil data and operational data. See table I.

3.3.2 Contact data and load rating. See MIL-PRF-83536/1.

3.3.3 Operate time. 4 milliseconds maximum with rated coil voltage @ 25°C.

3.3.4 Release time. 4 milliseconds maximum from rated coil voltage @ 25°C.

3.3.5 Contact bounce. .5 millisecond maximum.

3.3.6 Break bounce normally open contacts only. 0.1 millisecond maximum.

3.3.7 Overload current. 20 amperes dc, 30 amperes ac.

3.3.8 Rupture current. 25 amperes dc, 40 amperes ac.

3.4 Physical. Physical requirements of the relay shall be as specified in MIL-PRF-83536/1 and herein.

3.4.1 Mounting studs. The mounting studs shall be corrosion resistant steel.

3.4.2 Dimension and configuration. See figure 1.

TABLE I. Operating characteristics.

Coil Data										
At 25 °C						Over temperature range			Maximum pickup voltage	
Coil voltage (V dc) 1/		Coil resistance (ohms) minimum	Specified pickup voltage (V dc) 2/	Specified hold voltage (V dc) 2/	Specified dropout voltage (V dc) 2/	Specified pickup voltage (V dc) 2/	Specified hold voltage (V dc) 2/	Specified dropout voltage (V dc) 2/	High temperature test	Continuous current test
Rated	Max									
12	14.5	85	6.5	3.3	0.75	9.0	4.5	0.5	9.9	11.25

1/ CAUTION: The use of any coil voltages less than the rated coil voltage will compromise the operation of the relay.
2/ Pickup, hold, and dropout voltages as shown are for test purposes only and are not to be used for design criteria.

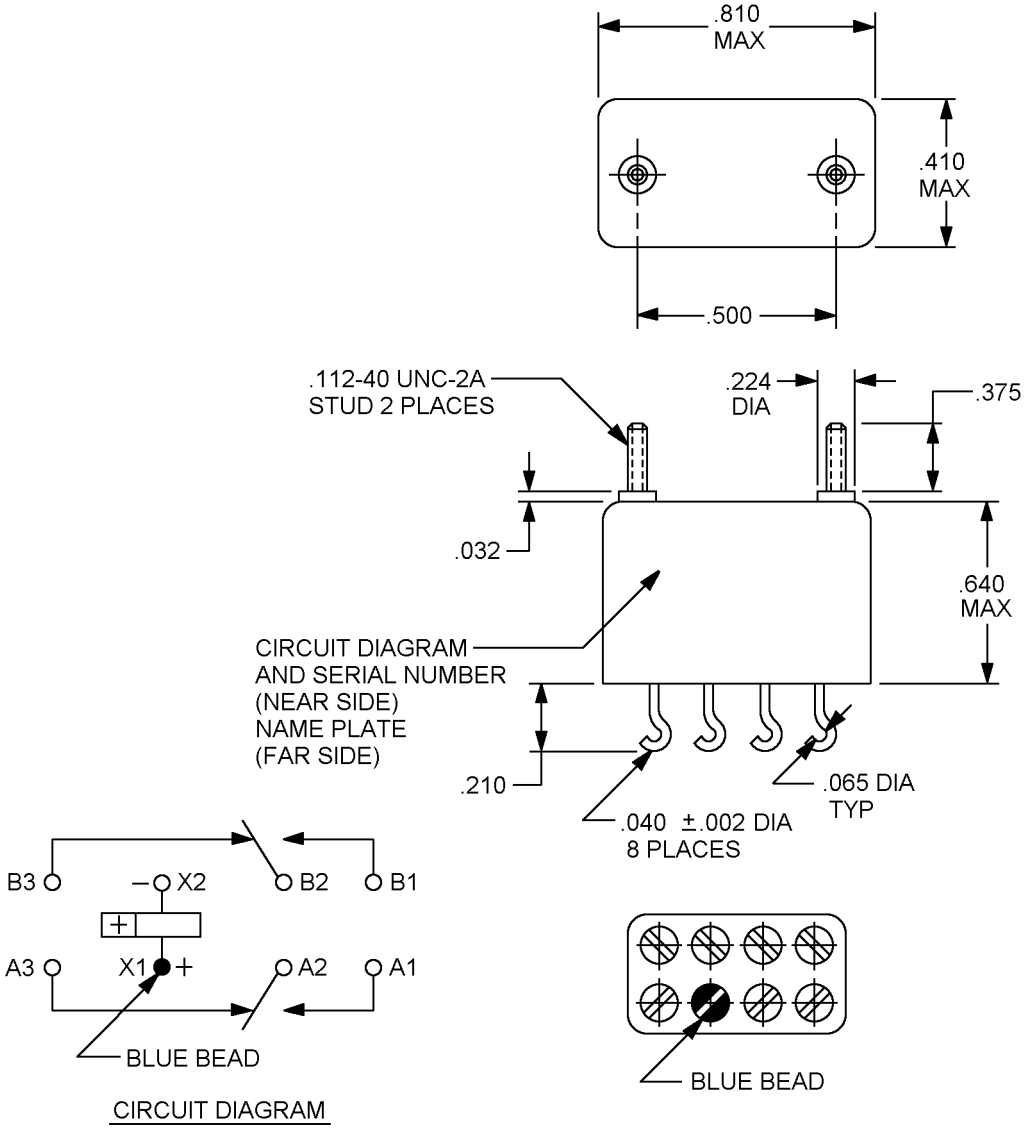

FIGURE 1. Outline drawing (for details, see table I).

DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OHIO	SIZE A	CODE IDENT NO. 14933	DWG NO. 84133
		REV D	PAGE 4

Inches	mm
.001	0.03
.002	0.05
.032	0.81
.040	1.02
.065	1.65
.112	2.84
.210	5.33
.224	5.69
.375	9.53
.410	10.41
.500	12.70
.640	16.26
.810	20.57

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ± .010 (0.25 mm).
4. There shall be affixed to the relay a suitable legible circuit diagram that identifies each terminal location specified.
5. These relays are polarized monostable.
6. This relay shall not operate or be damaged by reverse polarity. Semiconductors shall not be used for this purpose.
7. Permanent magnet drive consists of a permanent magnet with its flux path switched and combined with the electro-magnet flux.
8. Metric equivalents are given for general information only.

FIGURE 1. Outline drawing (for details, see table I) - Continued.

3.5 Environmental characteristics. Relays shall meet all environmental requirements as specified in MIL-PRF-83536/1 and herein.

3.5.1 Vibration.

3.5.1.1 Sinusoidal. 0.12 inch double amplitude, 10 to 57 Hz, 20g's, 57 to 2,000 Hz.

3.5.1.2 Random. Random vibration, method 214 of MIL-STD-202, test condition IE, $0.2G^2$/Hz (50 Hz to 2,000 Hz) for a duration of 15 minutes in each plane.

3.5.1.3 Shock. 100g's for a duration of 6 milliseconds.

3.6 Marking. Marking shall be in accordance with MIL-PRF-83536, except the part number shall be in accordance with 1.2 herein. The "M83536/1-XXXM" part number shall not be used.

3.7 Conformance requirements. Relays furnished under this drawing shall have been subjected to, and passed all the requirements, tests, and inspections detailed herein.

3.7.1 Conformance inspection. Conformance inspection shall be in accordance with MIL-PRF-83536 and 4.2 herein.

3.8 Certification as an approved source of supply. In order to be listed as an approved source of supply for relays manufactured to this drawing, a manufacturer shall:

a. Agree to make available to DSCC, upon request, all pertinent test data on its production of the subject part, including, but not limited to, test data in accordance with the qualification inspection table of MIL-PRF-83536.

b. Provide to DSCC or its designated agent, upon request, free of charge and without obligation, a current production sample from its production of the subject part.

c. Meet one of the following criteria:

(1) Currently possess listing on qualified products list QPL-83536 for at least one part.

(2) Be in current production of the subject part.

3.9 Certificate of compliance. A certificate of compliance shall be required from manufacturers requesting to be a suggested source of supply.

3.10 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.11 Workmanship. The relay shall be uniform in quality and free from any defects that will affect life, serviceability, or appearance.

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection shall be in accordance with MIL-PRF-83536 except as modified herein.

4.2 Conformance inspection. Conformance inspection shall be in accordance with group A listing of MIL-PRF-83536. Group A testing shall be performed on each inspection lot and manufacturers shall keep lot records for 3 years (minimum), monitor for compliance to the prescribed procedures, and observe that satisfactory manufacturing conditions and records on lots are maintained for these relays.

4.2.1 Group A inspection. Group A inspection shall consist of all tests specified in MIL-PRF-83536 for failure rate level "M".

4.3 Inspection of packaging. Inspection of packaging shall be in accordance with MIL-PRF-83536.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.3). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Notes. Only definitions of the notes specified in MIL-PRF-83536 will apply to this drawing.

6.2 Intended use. Relays conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for OEM application. This drawing is intended exclusively to prevent the proliferation of unnecessary duplicate specifications, drawings, and stock catalog listings. When a military specification exists and the product covered by this drawing has been qualified for listing on QPL-83536, this drawing will become inactive for new design. The QPL-83536 product shall be the preferred item for all applications.

6.3 Ordering data. The contract or purchase order should specify the following:

a. Complete PIN (see 1.2).

b. Requirements for delivery of one copy of the conformance inspection data or certificate of compliance that parts have passed conformance inspection with each shipment of parts by the manufacturer.

c. Requirements for packaging and packing.

6.4 Replaceability. Relays covered by this drawing will replace the same generic device covered by a contractor prepared specification or drawing.

6.5 Supersession data. MIL-R-6106/27 was cancelled on 2 October 1995 and superseded by MIL-PRF-83536/1 and MIL-PRF-83536/2.

6.6 Users of record. Coordination of this document for future revisions are coordinated only with the suggested sources of supply and the users of record of this document. Requests to be added as a recorded user of this drawing should be in writing to: Defense Supply Center, Columbus, ATTN: DSCC/VAT, Post Office Box 3990, Columbus, OH 43216-5000 or by telephone (614) 692-0554 or DSN 850-0554.

6.7 Suggested sources of supply. Suggested sources of supply are listed herein. Additional sources will be added as they become available. For assistance in the use of this drawing, contact Defense Supply Center, Columbus, ATTN: DSCC-VAT, Post Office Box 3990, Columbus, OH 43216-5000 or by telephone (614) 692-0554 or DSN 850-0554.

DSCC drawing PIN	Vendor similar designation or type number 1/	Vendor CAGE	Vendor name and address
84133-001	X-G2B-010	58657	Leach International, Incorporated 6900 Orangethorpe Avenue Buena Park, CA 90622-5032 Phone: (714) 736-7440
84133-001	FCB-205-186	00213	MSD/Magnecraft Electric Company 700 Orange Street Darlington, SC 29532-3742 Phone: (704) 599-0359

1/ Parts must be purchased to the DSCC PIN to assure that all performance requirements and tests are met.